*Results:* (Mean ± SD).

| Grade | jet width (PLAX) | jet width (4C) | pk E |
|---|---|---|---|
| mild MR | 0.35 ± 0.1* | 0.30 ± 0.1* | 0.84 ± 0.2* |
| mod MR | 0.56 ± 0.1* | 0.56 ± 0.1* | 1.2 ± 0.3* |
| sev MR | 0.73 ± 0.1* | 0.82 ± 0.1* | 1.5 ± 0.38* |

* $p < 0.05$ for difference between mild MR vs mod MR, mild MR vs sev MR, mod MR vs sev MR.

Jet width and E wave velocity correlated with RF (PLAX vs RF: $r = 0.73$, $p < 0.0001$; 4C vs RF: $r = 0.78$, $p < 0.0001$; pkE vs RF: $r = 0.5$, $p < 0.0001$). Jet width (PLAX and 4C) also correlated with pk E ($r = 0.6$, $p < 0.0001$). All pts with an RF < 20 had a jet width <0.65 cm and E vel < 1.6 cm/sec. In those with an RF > 60, all pts had a jet width >0.6 and an E wave velocity >1.1 m/sec.

*Conclusion:* Both the jet width of the vena contracta and the E wave velocity are simple relatively easy to measure parameters which cruel serve as sentinels of hemodynamically significant MR.

## 1203-117 Does Atrial Fibrillation Compromise Peak Inflow Velocity as an Index of Mitral Regurgitation Severity

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*Background:* Peak mitral inflow velocity (pk E vel), an analog of regurgitant volume, is a simple indicator of mitral regurgitation (MR) severity in patients with sinus rhythm (SR) but its utility in atrial fibrillation (AF) remains unknown. Our aim was to test the hypothesis that pk E vel remains a valid indicator of MR severity in AF.

*Methods:* We retrospectively studied 60 consecutive pts with MR (30 in AF and 30 in SR) from the UCSF Echo database (The AF and SR subgroups had 10 pts in the MR categories: mild, moderate and severe) and measured pk E vel (average of 3–5 beats) and regurgitant fraction (RF).

*Results:* For SR, there was a significant difference in pk E vel among the categories by analysis of variance ($F = 19.5$, $p < 0.0001$) and the pk E vel correlated with the RF ($r = 0.6$, $p < 0.001$). In AF, however, there was no significant difference in pk E vel among the groups of MR and the pk E vel did not correlate with the RF ($p > 0.05$).

| Grade | Sinus Rhythm | AF |
|---|---|---|
| Mild MR | 0.8 ± 0.2* | 0.2 ± 0.2* |
| Mod MR | 1.2 ± 0.3* | 1.0 ± 0.3* |
| Sev MR | 1.6 ± 0.3* | 1.3 ± 0.3* |

(Results = Mean ± SD * = $p < 0.05$ between mild and mod MR, mild and sev MR and mod and sev MR)

*Conclusion:* The peak E wave velocity is a good reflector of regurgitant volume and hence of MR severity in pts with SR. In patients with MR in AF however, pk E vel cannot be used because beat to beat variability, in inflow volume obscures its relationship to regurgitant volume.

## 1203-118 Assessment of Left Ventricular Filling Pressure by Doppler Echocardiography: Comparison of Pulmonary Venous Flow With Changes in Mitral Filling Pattern Educed by Valsalva Maneuver

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*Background:* It has been shown that both pulmonary venous flow and changes in mitral inflow pattern caused by reduced preload (e.g. Valsalva maneuver [VM]) are useful in predicting left ventricular filling pressure. However, it is unknown whether both methods are comparable.

*Methods:* We prospectively compared mitral inflow pattern at rest (E/A) and its changes during VM (ΔE/A) as well as atrial reversal (AR) in pulmonary veins (velocity, difference of duration of AR minus duration of A) with invasively measured post-A left ventricular end-diastolic pressure (LVEDP) in 54 patients (pts; age 61 ± 9 years). The mean LVEDP was 14.4 ± 5.0 mmHg. A LVEDP ≥ 14 mmHg was considered to be elevated.

*Results:* LVEDP was elevated in 50% of pts. The table illustrates the Doppler values in pts with normal and elevated LVEDP.

| LVEDP | Normal | Elevated | p |
|---|---|---|---|
| E/A | 1.0 ± 0.4 | 1.4 ± 0.9 | ns |
| ΔE/A | −22.6 ± 19.0% | −46.5 ± 13.1% | 0.0001 |
| AR velocity | 29.7 ± 6.5 cm/s | 37.0 ± 5.1 cm/s | 0.0001 |
| Δ duration AR-duration A | −19.2 ± 25.0 ms | 5.0 ± 17.7 ms | 0.001 |

An elevated LVEDP was detected with a sensitivity of 77% and specificity of 89% by means of change in E/A of >40% during the VM. These values were 60% and 89% for Δduration AR-duration A > 0 ms and 79% and 73% for AR velocity ≥35 cm/s, respectively.

*Conclusions:* Changes in E/A during the VM detected an elevated LVEDP reliably and were at least as effective as assessment of atrial reversal in pulmonary veins.

## 1204 Stress Echocardiography: Predictive Value and Clinical Outcome

**Wednesday, April 1, 1998, Noon–2:00 p.m.**
**Georgia World Congress Center, West Exhibit Hall Level**
**Presentation Hour: Noon–1:00 p.m.**

## 1204-119 Left Ventricular Obstruction Provoked During Dobutamine Stress Echocardiography Predicts Chest Pain, Syncope and Dizziness

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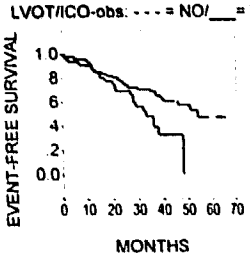
The clinical significance of left ventricular (LV) outflow tract (LVOT-obs) and intracavitary (ICO-obs) obstructions provoked during dobutamine stress echo (DSE) is unknown. We postulated that this finding would predict subsequent chest pain, syncope and/or dizziness.

*Methods:* 240 pts undergoing DSE were enrolled and 79 were excluded due to DSE provoked ischemia (n = 75) or inadequate DSE (n = 4), leaving 161 pts (116 M/45 F) mean age 60 ± 13 yrs. Dobutamine was infused from 5 to 40 ug/kg/min and continuous wave Doppler was performed at rest and peak to assess for LV obstruction. Pts were prospectively followed for a mean of 31 ± 13 months (max 69 mo).

*Results:* 46 of 161 (29%) pts had LVOT-obs (n = 20), ICO-obs (n = 25) or both (n = 1) with an estimated mean peak gradient of 36 ± 27 mmHg. Multivariate logistic regression showed positive predictors of chest pain (n = 51), syncope (n = 6) and/or dizziness (n = 17) as LVOT-obs and/or ICO-obs (odds ratio = 2.8, p = 0.008) and h/o chest pain (odds ratio = 3.1, p = 0.002). Age, DSE provoked chest pain, peak heart rate and blood pressure were not predictors. Kaplan-Meier analysis showed a less event-free survival (for a composite end-point of chest pain, syncope and dizziness) in the group with provoked LVOT - and/or ICO-obs (p = 0.017).




*Conclusions:* This is the first prospective study showing that LV obstruction provoked during DSE is an independent positive predictor of chest pain, syncope and/or dizziness. These findings are likely to direct future studies addressing treatment options to ameliorate symptoms in this subgroup of patients.

## 1204-120 Long Term Prognosis of Women With Normal Dobutamine Echocardiography

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*Background:* Dobutamine stress echocardiography (DSE) is accurate in evaluating suspected coronary artery disease (CAD). However, the long-term prognostic value of a normal DSE in women has not been established.

*Methods:* We retrospectively reviewed 110 normal DSEs from 1/93–2/97. 100 patients were available for telephone follow-up. Cardiac risk factors and any cardiac events (cardiac death, MI, CHF, revascularization, angina) were identified.

*Results:* Age at follow up was 60 ± 13 years. Mean follow up period was 24.3 months (range 7–45). Risk factors included diabetes (12%), HTN (54%), hypercholesterolemia (28%), smoking (17%), previous CAD history (22%), no estrogen replacement therapy (57%) and family history of CAD (45%). There were 6 non-cardiac deaths, no myocardial infarctions, two